

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

DOCKET FILE COPY ORIGINAL

In the Matter of)
)
1998 Biennial Regulatory Review --)
Amendment of Parts 2, 25 and 68 of the)
Commission's Rules to Further Streamline)
the Equipment Authorization Process for)
Telephone Terminal Equipment, Implement)
Mutual Recognition Agreement and Begin)
Implementation of the Global Mobile Personal)
Communication by Satellite (GMPCS))
Arrangements)

GEN Docket No. 98-68

RECEIVED

JUL 27 1998

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

To: The Commission

COMMENTS OF METRICOM, INC.

1. Metricom, Inc. ("Metricom"), by its attorneys, pursuant to Section 1.415 of the Commission's rules, hereby submits these Comments in response to the Commission's Notice of Proposed Rule Making ("NPRM") in the above-referenced proceeding.¹ The Commission seeks comment on its proposal to allow private entities to certify equipment. While Metricom supports the Commission's proposal, Metricom believes additional safeguards are essential to attempt to ensure that non-conforming equipment is not allowed to operate in the marketplace and, if it is operating in the marketplace, that procedures are in place for the expedited removal of such equipment.

1. 63 Fed. Reg. 31685 (June 10, 1998).

I. BACKGROUND AND INTEREST

2. Metricom is a young, rapidly growing, wireless telecommunications company based in Silicon Valley. As a result of the Commission's encouragement, articulated in various Part 15 proceedings, Metricom has become a pioneer in the development of state-of-the-art, spread spectrum, unlicensed data communications systems operating pursuant to Part 15 of the Commission's rules. Metricom has invested significant sums of money, time and energy to develop, manufacture and deploy sophisticated RF devices which operate on an unlicensed basis pursuant to Part 15 of the Commission's rules. Metricom's newest generation of equipment will operate at a gross over-the-air transmission rate of up to 1 Mbps, and provide user data rates of up to 128 kbps. Metricom's Ricochet² service is the fastest, most easily deployable, and least expensive campus and metropolitan area wireless data network available today. Metricom currently serves nearly 24,000 subscribers.

3. Metricom was able to develop its system primarily because the FCC encouraged Metricom and others to operate spread spectrum systems in an unlicensed environment. Commercially successful operations in the unlicensed environment depend on the utilization of adaptive and intelligent RF transceivers. In spread spectrum systems, interference at the radio physical layer is mitigated and "worked through" by technologies applied at the link and routing layers of current Part 15 systems and by coding gain and additional signal processing. Thus, newer technologies deal very well with interference: both intrasystem and intersystem interference is expected by design engineers and is considered a normal part of operations. In

2. Ricochet is a registered trademark of Metricom.

fact, spread spectrum is one of those newer technologies that helps reduce interference to and from other systems.

4. Problems will arise, however, if a product is permitted into the band which is not compatible with existing sharers of the band because it is not operating in exact accordance with the Commission's rules. This is especially true in the case of low power, Part 15 devices. While Part 15 spread spectrum devices are quite robust, because of the minimal power used, any equipment not operating in accordance with the rules could cause harmful interference to those in compliance with the Commission's rules. For example, just one instance of non-complying equipment could conceivably cause harmful interference to Metricom's operations throughout an entire metropolitan area. Accordingly, Metricom's concern with non-complying equipment is quite real.

5. The requirements of Section 15.5(b) of the rules (*i.e.*, unlicensed equipment must accept interference from other equipment) do **not** mean that interference must be accepted from equipment that is not properly certified. The Commission has consistently created a balance -- an environment where the greatest number of possible users are operating in the band and the needs of low power operators and others can peacefully co-exist in the same frequency band.³ The Commission must be careful, then, when authorizing private entities to certify equipment, that these entities are capable of conducting the careful evaluation necessary to ensure that the balance the Commission has created will not be destroyed or polluted by non-compliant

3. See, *e.g.*, *Memorandum, Opinion and Order, Automatic Vehicle Monitoring Systems*, 10 FCC Rcd. 4695(1995); *First Report and Order, Allocation of Spectrum Below 5 GHz Transferred From Federal Government Use*, 10 FCC Rcd 4545 (1995).

equipment receiving certification and operating to the detriment of properly authorized equipment.

II. THE COMMISSION MUST ESTABLISH STRICT QUALIFICATION REQUIREMENTS FOR PRIVATE ENTITIES SEEKING TO CERTIFY EQUIPMENT

6. The Commission proposes to require private entities seeking to certify equipment, referred to as Telecommunication Certification Bodies (“TCBs”), to adhere to the requirements set forth in ISO/IEC Guide 65.⁴ The Commission also proposes to require TCBs to adhere to additional requirements designed to ensure the TCBs have comprehensive knowledge of the Commission’s rules and regulations.⁵ Specifically, the Commission proposes to require TCBs to demonstrate “expert knowledge of the regulations for each product with respect to which the body seeks designation.”⁶ Metricom supports the Commission’s proposed qualification criteria for TCBs but urges the Commission to also require TCBs to demonstrate their knowledge of the type of equipment they seek to certify.

7. In many instances, simply being aware of the Commission’s regulations is not enough to ensure proper equipment certification. A thorough understanding of the Commission’s regulations and the equipment to be certified is necessary to ensure equipment will not cause harmful interference to other operations. For example, spread spectrum equipment

4. NPRM at ¶12,

5. *Id.* at ¶13.

6. NPRM at ¶13.

is very complex and even the equipment application examiners at the Commission's Lab often have questions about the equipment that must be answered before they will certify the equipment. Private entities typically have less knowledge about equipment and the certification process than the Commission. Therefore, the Commission should require private entities seeking qualification as a TCB to demonstrate a thorough understanding of the equipment they intend to certify, and how the Commission's rules apply to that type of equipment.

8. The Commission also proposes to require entities seeking designation as a TCB to be evaluated and approved by the National Institute of Standards and Technology ("NIST") under its National Voluntary Conformity Assessment System Evaluation.⁷ The Commission states that this program is currently used to certify that entities seeking to approve equipment for export meet the requirements of ISO/IEC Guide 65.⁸ Presumably, then, NIST would be qualified to evaluate prospective TCBs for compliance with ISO/IEC Guide 65. However, the Commission does not provide any indication that NIST is familiar with the Commission's rules and regulations or why the Commission believes that NIST would be able to evaluate prospective TCBs for compliance with the requirements set forth by the Commission in paragraph 13 of the NPRM.

9. Without any expertise in the Commission's rules and regulations, NIST would be incapable of evaluating prospective TCBs for their knowledge of the Commission's rules and regulations. Ideally, the Commission itself should make this evaluation. If the Commission

7. NPRM at ¶ 14.

8. *Id.*

were to establish and administer its own program for designating TCBs, however, the resources necessary to do so would likely defeat the Commission's goal of redirecting its resources to enforcement of the rules.⁹ Accordingly, to ensure that TCBs are able to do the job the Commission expects them to do, without usurping all of the resources the Commission would save by allowing private entities to certify equipment, the Commission should require prospective TCBs to adhere to a two-step approval process.

10. The first step would be evaluation by NIST for compliance with ISO/IEC Guide 65. The second step would be evaluation by the Commission of the would-be TCBs' expertise in the Commission's rules and regulations and the type of equipment for which the entity seeks designation as a TCB. This is the only way to ensure TCBs are fully aware of, and knowledgeable in, the Commission's rules and regulations governing equipment authorization. Failure to strictly enforce this requirement could result in noncompliant equipment entering the marketplace and causing harmful interference to existing operations.

11. As an additional safeguard to attempt to ensure that TCBs adhere to all applicable standards, the Commission should require TCBs to be bonded. If a TCB is found to have certified equipment in violation of the Commission's rules, the TCB would be required to forfeit the bond. Requiring TCBs to obtain, and possibly forfeit, a bond would likely provide more of a deterrent to misconduct by TCBs than merely suspending or revoking their TCB designation, as proposed in the NPRM.¹⁰

9. See NPRM at ¶ 11.

10. See NPRM at ¶ 15.

III. THE COMMISSION MUST ESTABLISH A FORMAL PROCESS FOR TCBs TO CONSULT WITH THE COMMISSION AND RECEIVE RULINGS

12. Metricom firmly supports the Commission's goal of expediting the equipment approval process, and looks forward to having its own products reach the marketplace more quickly. However, it is undisputed that technology moves much faster than regulation, especially in the unlicensed, spread spectrum areas. Issues relating to "smart radios" and "smart antennas" are already raising questions in connection with equipment certification. Therefore, while there are existing rules for equipment certification, new technologies call the applicability of these rules into question. The FCC's Equipment Authorization Lab is to be commended for its efforts to adapt the Commission's rules to new technologies and approve equipment through policy determinations rather than by lengthy rule making proceedings which delay the introduction of new technologies to the public.

13. If TCBs are permitted to approve equipment, they will have no authority or ability to consider new technological applications which do not fit exactly within the rules. In order to allow new technology into the marketplace -- so that the public can take advantage of it -- there must be some process established whereby a TCB can request and receive some ruling from the Commission as to whether a proposed type of operation, which does not fit exactly within the rules, is acceptable. This process should establish procedures and a strict timetable for the resolution of authorization issues which do not fit precisely within the rules.

IV. THE COMMISSION MUST ADOPT ACTIVE ENFORCEMENT MECHANISMS FOR PRIVATELY CERTIFIED EQUIPMENT

14. In its NPRM, the Commission stated, "ISO/IEC Guide 65 requires product certifiers to ... conduct internal audits and perform post-market surveillance."¹¹ The Commission also stated that it will require TCBs to "periodically perform audits of equipment on the market that they have certified to ensure continued compliance [with the Commission's rules]."¹² However, neither of these enforcement mechanisms provides a method of auditing TCBs to ensure that the equipment they certify complies with the Commission's rules and regulations.

15. In the Commission's recent *Report and Order* streamlining equipment authorization procedures, the Commission agreed with Metricom that enforcement of the Commission's equipment authorization rules needs to be done expeditiously.¹³ Specifically, the Commission amended Section 2.946 of its rules to require "any responsible party", or any party who markets equipment, to provide test samples or data to the Commission within **fourteen days** of a request by the Commission. Prior to this change in the rules, parties who marketed equipment were required to supply an equipment sample to the Commission within sixty days of a request by the Commission. The Commission reduced the amount of time parties have to submit equipment samples to the Commission out of recognition that nonconforming equipment

11. NPRM at ¶ 12.

12. *Id.* at ¶ 17(j).

13. *See Report and Order, Streamline the Equipment Authorization Process For Radio Frequency Equipment*, ET Docket 97-94, released April 16, 1998, 63 Fed. Reg. 36591 (July 7, 1998) at ¶¶ 38-98.

can cause harmful interference to existing operations and should be removed from the marketplace as soon as possible.¹⁴

16. Similarly, the Commission should adopt enforcement mechanisms which include obtaining equipment for auditing TCBs' performance. By periodically auditing TCBs and TCB-approved equipment to ensure the TCBs are properly certifying equipment, the Commission can eliminate many potential interference problems. By specifying a two-week time period in which to submit equipment, any non-complying equipment can be identified and removed expeditiously from the marketplace. In addition, TCBs operating in violation of the rules can be notified expeditiously.

17. Metricom also recommends the Commission adopt rules that specifically define the procedures for parties to file a complaint against TCBs, or equipment manufacturers, alleging their equipment certification procedure or equipment does not comply with the Commission's rules. These rules should also contain a definitive time period for the Commission to respond to allegations of noncompliance. This complaint process would provide the Commission with an additional method of becoming aware of non-compliance problems, and could minimize the number of equipment audits the Commission needs to perform.

18. In order to ensure the complaint process is not abused, the Commission should require that if a party complains that equipment was improperly approved by a TCB and the complaining party is incorrect, that party should bear the costs associated with defending the equipment approval, unless some exemption is granted by the Commission.

14. *Id.* at ¶ 39.

19. Finally, as another enforcement measure, the Commission must adopt specific guidelines that provide for the expeditious removal of improperly certified equipment from the marketplace. If equipment is found to have been improperly certified, it must cease operation immediately and be removed from the marketplace so that it does not cause harmful interference to authorized operations. In order to locate non-complying equipment, the Commission should require that the manufacturers of privately certified equipment maintain records, to the extent possible, of the whereabouts of their equipment so that it can be removed from service if necessary.

V. CONCLUSION

20. For all of the foregoing reasons, Metricom urges the Commission to adopt additional safeguards and enforcement mechanisms, consistent with the views expressed herein, to minimize the risk of noncompliant equipment entering the marketplace and causing harmful interference to existing operations.

Respectfully submitted,

METRICOM, INC.

By:


Henry M. Rivera

Larry S. Solomon

M. Tamber Christian

SHOOK, HARDY & BACON L.L.P.

1850 K Street, NW

Suite 900

Washington, DC 20006

(202) 452-1450

ITS ATTORNEYS

Dated: July 27, 1998